

IN THE CLAIMS

No claims are amended, canceled, or added. The claims are repeated herein only for reviewing convenience.

1.-61. (Canceled)

62. (Previously Presented) A method of forming a semiconductor structure, the method comprising:

- forming a first conductive layer;
- forming an insulation layer abutting the first conductive layer;
- forming a second conductive layer abutting the insulation layer;
- forming an inhibiting layer abutting the second conductive layer, wherein the inhibiting layer inhibits formation of an undesired oxidation compound so as to enhance an ohmic contact;

and

- forming a diffusion barrier layer abutting the inhibiting layer wherein the inhibiting layer is embedded in the second conductive layer.

63. (Canceled)

64. (Previously Presented) A method of forming a semiconductor structure, the method comprising:

- forming a first conductive layer over a substrate wherein the first conductive layer includes a conductive metal oxide;

- forming an insulation layer abutting the first conductive layer;
- forming a second conductive layer abutting the insulation layer;
- forming an inhibiting layer over the second conductive layer, wherein the inhibiting layer inhibits formation of an undesired oxidation compound so as to enhance an ohmic contact;

- forming a diffusion barrier layer over the inhibiting layer and the second conductive layer; and

forming a metalization layer, the metalization layer including a first portion coupled to the diffusion barrier layer, and a second portion coupled to the substrate.

65. (Previously Presented) The method of claim 64, wherein the conductive metal oxide is selected from a group consisting of ruthenium oxide and iridium oxide.

66. (Previously Presented) A method of forming a semiconductor structure, the method comprising:

forming a first conductive layer over a substrate, wherein forming the first conductive layer includes forming the first conductive layer from at least one conductive metal oxide, wherein the at least one conductive metal oxide is selected from a group consisting of ruthenium oxide and iridium oxide;

forming an insulation layer abutting the first conductive layer, wherein the insulation layer includes at least one insulator metal oxide;

forming a second conductive layer abutting the insulation layer;

forming an inhibiting layer over the second conductive layer, wherein the inhibiting layer inhibits formation of an undesired oxidation compound so as to enhance an ohmic contact;

forming a diffusion barrier layer over the inhibiting layer and the second conductive layer; and

forming a metalization layer, the metalization layer including a first portion coupled to the diffusion barrier layer, and a second portion coupled to the substrate.

67. (Previously Presented) The method of claim 66, wherein the insulator metal oxide includes ditantalum pentaoxide.

68. (Previously Presented) The method of claim 66, wherein the second conductive layer includes a conductive metal oxide.

69. (Previously Presented) The method of claim 68, wherein the conductive metal oxide is selected from a group consisting of ruthenium oxide and iridium oxide.

70. (Previously Presented) The method of claim 66, wherein the inhibiting layer includes a substance selected from a group consisting of a transition metal, a transition metal alloy, a nitride compound, a noble metal, and a noble metal alloy.

71. (Previously Presented) The method of claim 70, wherein the transition metal is selected from a group consisting of platinum, rhodium, and tungsten.

72. (Previously Presented) The method of claim 70, wherein the transition metal alloy includes a platinum rhodium alloy.

73. (Previously Presented) The method of claim 70, wherein the nitride compound is selected from a group consisting of tungsten nitride and titanium nitride.

74. (Previously Presented) A method of forming a semiconductor structure, the method comprising:

forming a first conductive layer over a substrate, wherein the first conductive layer comprises at least one conductive metal oxide, wherein the at least one conductive metal oxide is selected from a group consisting of ruthenium oxide and iridium oxide;

forming an insulation layer abutting the first conductive layer, wherein the insulation layer comprises at least one insulator metal oxide, wherein the at least one insulator metal oxide includes ditantalum pentaoxide;

forming a second conductive layer abutting the insulation layer, wherein the second conductive layer comprises at least one conductive metal oxide, wherein the at least one conductive metal oxide is selected from a group consisting of ruthenium oxide and iridium oxide;

forming an inhibiting layer over the second conductive layer, wherein the inhibiting layer comprises a substance selected from a group consisting of a transition metal, a transition metal alloy, a nitride compound, a noble metal, and a noble metal alloy, wherein the transition metal alloy includes a platinum rhodium alloy, wherein the transition metal is selected from a group consisting of platinum, rhodium, and tungsten, wherein the nitride compound is selected from a

group consisting of tungsten nitride and titanium nitride, wherein the noble metal is selected from a group consisting of platinum, gold, titanium, and silver, and wherein the noble metal alloy is selected from a group consisting of graphite, chlorimet 3, and hastelloy C;

forming a diffusion barrier layer over the inhibiting layer and the second conductive layer; and

forming a metalization layer, the metalization layer including a first portion coupled to the diffusion barrier layer, and a second portion coupled to the substrate.

75. (Previously Presented) The method of claim 74, wherein the diffusion barrier includes a conductive material.

76. (Previously Presented) The method of claim 75, wherein the diffusion barrier includes a material selected from a group consisting of a nitride compound, a carbide compound, a boride compound, a transition metal alloy, and a transition metal nitride compound alloy.

77. (Previously Presented) The method of claim 75, wherein the nitride compound includes titanium nitride.

78. (Previously Presented) The method of claim 75, wherein the transition metal alloy includes titanium tungsten.

79. (Previously Presented) The method of claim 75, wherein the transition metal nitride compound alloy includes titanium nitride tungsten.

80. (Previously Presented) A method of forming a semiconductor structure, the method comprising:

forming a first conductive layer, wherein the first conductive layer comprises at least one conductive metal oxide, wherein the at least one conductive metal oxide is selected from a group consisting of ruthenium oxide and iridium oxide;

forming an insulation layer abutting the first conductive layer, wherein the insulation layer comprises at least one insulator metal oxide, wherein the at least one insulator metal oxide includes ditantalum pentaoxide;

forming a second conductive layer abutting the insulation layer, wherein the second conductive layer comprises at least one conductive metal oxide, wherein the at least one conductive metal oxide is selected from a group consisting of ruthenium oxide and iridium oxide;

forming an inhibiting layer abutting the second conductive layer, wherein the inhibiting layer comprises a substance selected from a group consisting of a transition metal, a transition metal alloy, a nitride compound, a noble metal, and a noble metal alloy, wherein the transition metal alloy includes a platinum rhodium alloy, wherein the transition metal is selected from a group consisting of platinum, rhodium, and tungsten, and wherein the nitride compound is selected from a group consisting of tungsten nitride and titanium nitride, wherein the noble metal is selected from a group consisting of platinum, gold, titanium, and silver, and wherein the noble metal alloy is selected from a group consisting of graphite, chlorimet 3, and hastelloy C; and

forming a metallization layer abutting the inhibiting layer, wherein the metallization layer comprises a representative metal, and wherein forming the metallization layer further includes forming a diffusion barrier abutting the inhibiting layer, wherein the diffusion barrier comprises a nitride compound, a carbide compound, a boride compound, a transition metal alloy, and a transition metal nitride compound alloy, wherein the nitride compound includes titanium nitride, wherein the transition metal alloy includes titanium tungsten, wherein the transition metal nitride compound alloy includes titanium nitride tungsten.

81. (Previously Presented) The method of claim 80, wherein the representative metal includes aluminum.

82. (Original) The method of claim 80, further comprising forming a silicide contact on a substrate.

83. (Canceled)

84. (Previously Presented) The method of claim 80, further comprising:

forming an ohmic contact on a region of a substrate using a technique selected from a group consisting of doping the region of the substrate and forming a refractory metal silicide in the region of the substrate.

85. (Previously Presented) A method of forming a semiconductor structure, the method comprising:

forming an ohmic contact on a region of a substrate;

forming a first conductive layer, wherein the first conductive layer comprises at least one conductive metal oxide, wherein the at least one conductive metal oxide is selected from a group consisting of ruthenium oxide and iridium oxide;

forming a first insulation layer abutting the first conductive layer, wherein the first insulation layer comprises at least one insulator metal oxide, wherein the at least one insulator metal oxide includes ditantalum pentaoxide;

forming a second conductive layer abutting the first insulation layer, wherein the second conductive layer comprises at least one conductive metal oxide, wherein the at least one conductive metal oxide is selected from a group consisting of ruthenium oxide and iridium oxide;

forming an inhibiting layer abutting the second conductive layer, wherein forming the inhibiting layer includes forming the inhibiting layer that includes the execution of a vapor deposition technique, wherein the vapor deposition technique is selected from a group consisting of physical vapor deposition and chemical vapor deposition, wherein the inhibiting layer comprises a substance selected from a group consisting of a transition metal, a transition metal alloy, a nitride compound, a noble metal, and a noble metal alloy, wherein the transition metal alloy includes a platinum rhodium alloy, wherein the transition metal is selected from a group consisting of platinum, rhodium, and tungsten, wherein the nitride compound is selected from a group consisting of tungsten nitride and titanium nitride, wherein the noble metal is selected from a group consisting of platinum, gold, titanium, and silver, and wherein the noble metal alloy is selected from a group consisting of graphite, chlorimet 3, and hastelloy C;

forming a second insulation layer abutting the first conductive layer and the ohmic contact; and

forming a metallization layer abutting the inhibiting layer, wherein the metallization layer comprises a representative metal, wherein the representative metal includes aluminum, and wherein forming the metallization layer includes forming a diffusion barrier abutting the inhibiting layer, wherein forming the diffusion barrier includes exposing the inhibiting layer and the ohmic contact through the second insulation layer, wherein the diffusion barrier comprises a nitride compound, a carbide compound, a boride compound, a transition metal alloy, and a transition metal nitride compound alloy, wherein the nitride compound includes titanium nitride, wherein the transition metal alloy includes titanium tungsten, wherein the transition metal nitride compound alloy includes titanium nitride tungsten.

86. (Previously Presented) The method of claim 85, wherein the inhibiting layer is formed on the second conductive layer.

87. (Previously Presented) The method of claim 85, wherein the inhibiting layer is embedded in the second conductive layer.

88.-90. (Canceled)